CLAIMS

1. A method for controlling outer loop transmit power for transmission power control of an uplink/downlink communication in a wireless communication system where a user equipment (UE) produces a target power level based upon received signals which it communicates to a base station from which the signals are received, the method comprising the steps of:

receiving at the UE a communication in the form of a series of communication segments from a base station;

analyzing the received communication within first and second composite windows;

periodically distinguishing between static and dynamic channel conditions in communication segments within the first and second windows;

generating a static adjustment value when the respective channel conditions of the communication segments in said first and second windows are different; and

adjusting the target power level in response to the static adjustment value.

2. The method of claim 1 wherein:

said first composite window has a predefined first window of a first length of a predetermined number of communication segments and a non-overlapping second window of a second length of a predetermined number of communication segments,

such that each segment of the communication is first analyzed in the first window and subsequently analyzed in the second window; and

said second composite window has a predefined third window of a third length of a predetermined number of communication segments and a non-overlapping fourth window of a fourth length of a predetermined number of communication segments, such that each segment of the communication is first analyzed in the third window and subsequently analyzed in the fourth window.

3. The method of claim 2 further comprising:

periodically characterizing dynamic channel conditions in communication segments within the third and fourth windows to generate a dynamic adjustment value; and

adjusting the target power level in response to the static adjustment value.

4. The method of claim 3 further comprising the steps of:

receiving from the base station a detected target power level;

detecting an error signal; and

adjusting the detected target power level in response to said detection of the error signal to generate the target power level before adjusting the target power level in response to the static and dynamic adjustment values.

5. The method of claim 1 wherein said first and second windows include a respective predetermined number of observations O1, each said observation O1 equal to a fixed number of communication segments and representing a time period OP1; and said periodic distinguishing between static and dynamic channel conditions is based upon values determined from each observation O1.

6. The method of claim 5 wherein said distinguishing step includes the steps of:

detecting a peak power point of said communication segments each observation O1 for said first and second windows, respectively;

comparing said detected peak power points to a predefined threshold value;

determining which of the first and second windows includes static channel conditions based upon said comparison; and

calculating said static adjustment value in response to said determination.

7. The method of claim 6 wherein said first window and said second window are separated by a first transition window of a fifth length and said first transition window is adjusted when said detected peak power points are not within the threshold value.

8. The method of claim 5 wherein said period of said distinguishing is equal to P1.

9. The method of claim 2 wherein said third and fourth windows include a respective predetermined number of observations O2, said observation O2 being equal to a fixed number of communication segments and representing a time period OP2, and said periodic characterizing of the dynamic channel conditions is based upon values determined from each observation O2.

10. The method of claim 9 wherein said characterizing step comprises the steps of:

detecting peak power ratios of said communication segments each observation O2 for the third and fourth windows, respectively;

comparing said detected power ratios to a second threshold value, said second threshold value being based in part on said peak power ratios; and

generating the dynamic adjustment value when the comparison is within the threshold.

11. The method of claim 10 wherein said third and fourth windows are separated by a second transition window of a sixth length, and said second transition window is adjusted when said detected power ratios are not within said second threshold.

12. The method of claim 11 wherein the period of said characterizing is OP2.

13. The method of claim 1 wherein said first and second windows include a respective predetermined number of observations O1, each said observation O1 equal to a fixed number of communication segments and representing a time period OP1; and said periodic distinguishing between static and dynamic channel conditions is based upon values determined from each observation O1;

said third and fourth windows include a respective predetermined number of observations O2, said observation O2 being equal to a fixed number of communication segments and representing a time period OP2, and said periodic characterizing of the dynamic channel conditions is based upon values determined from each observation O2.

14. The method of claim13 wherein said period of said distinguishing is equal to P1, and the period of said characterizing is OP2.

15. The method of claim 14 wherein said observations O1 and O2 are not equal.

16. The method of claim 3 wherein:

said distinguishing step includes the steps of:

detecting a peak power point of said communication segments each observation O1 for said first and second windows, respectively;

comparing said detected peak power points to a predefined threshold value;

determining which of the first and second windows includes static channel conditions based upon said comparison; and

calculating said static adjustment value in response to said determination; and

said characterizing step includes the steps of:

detecting peak power ratios of said communication segments each observation O2 for the third and fourth windows, respectively;

comparing said detected power ratios to a second threshold value, said second threshold value being based in part on said peak power ratios; and

generating the dynamic adjustment value when the comparison is within the threshold.

17. The method of claim 16 wherein:

said first window and said second window are separated by a first transition window of a fifth length and said first transition window is adjusted when said detected peak power points are not within the threshold value; and

said third and fourth windows are separated by a second transition window of a sixth length, and said second transition window is adjusted when said detected power ratios are not within said second threshold.

18. A receiver in a wireless communication system where a user equipment (UE) produces a target power level based upon received signals which it communicates to a base station from which the signals are received, which controls outer loop transmit power for transmission power control of an uplink/downlink communication and receives a communication in the form of a series of communication segments from a base station, comprising:

an error detection device for determining whether an error is present in a transmission time interval (TTI); and

a processor in communication with the error detection device, the processor for generating the target power level which is communicated to said base station and analyzing the received communication within first and second composite windows.

19. The receiver of claim 18, wherein:

said first composite window has a predefined first window of a first length of a predetermined number of communication segments and a non-overlapping second window of a second length of a predetermined number of communication segments, such that each segment of the communication is first analyzed in the first window and subsequently analyzed in the second window, for periodically distinguishing between static and dynamic channel conditions in communication segments within the first and second windows and generating a static adjustment value when the respective channel conditions of the communication segments in said first and second windows are different;

said second composite window has a predefined third window of a third length of a predetermined number of communication segments and a non-overlapping fourth window of a fourth length of a predetermined number of communication segments, such that each segment of the communication is first analyzed in the third window and subsequently analyzed in the fourth window, for periodically characterizing dynamic channel conditions in communication segments within the third and fourth windows to generate a dynamic adjustment value; and

said processor adjusts the target power level in response to the static and dynamic adjustment values.

20. The receiver of claim 19 wherein:

said received communication includes a detected target power level;

said processor further receives an error signal from said error detection device; and

the detected target power level is adjusted in response to said detection of the error signal to generate the target power level before adjusting the target power level in response to the static and dynamic adjustment values.

21. The receiver of claim 19 wherein said first and second windows include a respective predetermined number of observations O1, each said observation O1 equal to a fixed number of communication segments and representing a time period OP1; and said periodic distinguishing between static and dynamic channel conditions is based upon values determined from each observation O1.

22. The receiver of claim 19 wherein said first window and said second window are separated by a first transition window of a fifth length and said first transition window is adjusted when the first and second windows are not different.

23. The receiver of claim 19 wherein said period of said distinguishing is equal to P1.

24. The receiver of claim 19 wherein said third and fourth windows include a respective predetermined number of observations O2, said observation O2 being equal

to a fixed number of communication segments and representing a time period OP2, and said periodic characterizing of the dynamic channel conditions is based upon values determined from each observation O2.

25. The receiver of claim 19 wherein said third and fourth windows are separated by a second transition window of a sixth length.

26. The method of claim 24 wherein the period of said characterizing is OP2.

27. The receiver of claim 19 wherein said first and second windows include a respective predetermined number of observations O1, each said observation O1 equal to a fixed number of communication segments and representing a time period OP1; and said periodic distinguishing between static and dynamic channel conditions is based upon values determined from each observation O1;

said third and fourth windows include a respective predetermined number of observations O2, said observation O2 being equal to a fixed number of communication segments and representing a time period OP2, and said periodic characterizing of the dynamic channel conditions is based upon values determined from each observation O2.

28. The receiver of claim 27 wherein said period of said distinguishing is equal to P1, and the period of said characterizing is P2.

29. The receiver of claim 28 wherein said observations O1 and O2 are not equal.